V. REMARKS

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph. Unless otherwise canceled, the claims are amended to obviate the rejection. Withdrawal of the rejection is respectfully requested.

Claims 1, 2 and 15 are rejected under 35 U.S.C. 102(b) as anticipated by Sartori (U.S. Patent No. 5,130,032). The rejection is respectfully traversed.

Sartori teaches a method for treating a liquid medium. As recited in column 5, lines 20-25 of this reference, sonic ozone dispersion in conjunction with electromagnetic ozone enhancement produces microfine ozone bubbles of a diameter from smaller than 0.1 to about 0.5 microns with most bubbles between 0.2 and 0.3 microns. This reference also teaches ozone bubbles of 0.5 mm to about 1.0 cm as is produced with most conventional dispersion methods.

Claim 1 is canceled and therefore the rejection as applied to claim 1 is now moot.

Claims 2 and 15, as amended, now depend from newly-added claim 32 and include all of the features of claim 32. Applicant believes that claim 32 is allowable over the applied art. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reason claim 32 is allowable as well as for the features they recite.

Withdrawal of the rejection is respectfully requested.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as anticipated by Sherman (U.S. Patent No. 6,103,130).

Sherman teaches treatment of contaminated liquids using oxidizing gases such as ozone and chlorine dioxide. Sherman further teaches that the oxidizing gas is formed into sub-micron size bubbles. We note that the Examiner believes that sub-micron includes one micron. We believe sub-micron is less than one micron.

Claim 1 is canceled and therefore the rejection as applied to claim 1 is now moot.

Claim 2, as amended, now depends from newly-added claim 32 and include all of the features of claim 32. Applicant believes that claim 32 is allowable over the applied

art. Thus, it is respectfully submitted that the dependent claim is allowable at least for the reason claim 32 is allowable as well as for the features it recites.

Withdrawal of the rejection is respectfully requested.

Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as anticipated by Kerfoot (U.S. Patent No. 5,855,775). The rejection is respectfully traversed.

Kerfoot teaches a microporous diffusion apparatus that introduces an oxidizing agent comprising ozone that is mixed with ambient air into a soil formation to provide a multi-element gas by means of microporous diffusers.

Claim 1 is canceled and therefore the rejection as applied to claim 1 is now moot.

Claims 3-5, as amended, now depend from either newly-added claim 32 or newly-added claim 33 and include all of the features of such claims. Applicant believes that claims 32 and 33 are allowable over the applied art. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reasons the newly-added claims are allowable as well as for the features they recite.

Withdrawal of the rejection is respectfully requested.

Claims 18-20 are rejected under 35 U.S.C. 102(b) as anticipated by Sherman. The rejection is respectfully traversed.

Claims 18 and 19 are canceled and therefore the rejection as applied to these claims is now moot.

Claim 20, as amended, now depends from newly-added claim 34 and include all of the features of claim 34. Applicant believes that newly-added claim 34 is allowable over the applied art. Thus, it is respectfully submitted that the dependent claim is allowable at least for the reason claim 34 is allowable as well as for the features it recites.

Withdrawal of the rejection is respectfully requested.

Claims 1, 6-9 and 15 are rejected under 35 U.S.C. 102(b) as anticipated by Coury et al. (U.S. Patent No. 6,117,334). The rejection is respectfully traversed.

Coury teaches a decontamination reactor system for decontaminating a supply of contaminated liquid and includes a pressurizable reaction vessel and a pump. The pressurizable reaction vessel has a device for introducing a fluid, a device for expelling

a fluid while retaining a pressure within the vessel, a catalyst and a device for retaining the catalyst within the vessel. The pump mixes the contaminated liquid with the fluid. The pump forms a mixture having bubbles of the supplied fluid substantially less than or equivalent to 0.1 mm in diameter. The mixture is maintained at a sufficient pressure to prevent the formation of bubbles of a diameter greater than 0.1 mm within the reaction vessel.

Claims 1, 6 and 7 are canceled and therefore the rejection as applied to these claims is now moot.

Claims 8, 9 and 15, as amended, now depend from newly-added claim 32 and include all of the features of claim 32. Applicant believes that claim 32 is allowable over the applied art. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reason claim 32 is allowable as well as for the features they recite.

Withdrawal of the rejection is respectfully requested.

Claims 18, 19, 24, 25 and 28 are rejected under 35 U.S.C. 102(b) as anticipated by Coury et al. The rejection is respectfully traversed.

Claims 18 and 19 are canceled and therefore the rejection as applied to these claims is now moot.

Claims 24, 25 and 28, as amended, now depend from newly-added claim 34 and include all of the features of claim 34. Applicant believes that claim 34 is allowable over the applied art. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reason claim 32 is allowable as well as for the features they recite.

Withdrawal of the rejection is respectfully requested.

Claims 2-5 and 12 are rejected under 35 U.S.C. 103(a) as unpatentable over Coury. The rejection is respectfully traversed.

Claims 2-5, as amended, and 12 depend from either newly-added independent claim 32 or newly-added independent claim 33 and include all of the features of these claims. Applicant believes that newly-added claims 32 and 33 are allowable. Thus, it is

respectfully submitted that the dependent claims are allowable at least for the reasons the independent claims are allowable as well as for the features they recite.

Withdrawal of the rejection is respectfully requested.

Claims 20-23 are rejected under 35 U.S.C. 103(a) as unpatentable over Coury. The rejection is respectfully traversed.

Claims 20-23, as amended, depend from either newly-added independent claim 34 or newly-added independent claim 35 and include all of the features of these claims. Applicant believes that newly-added claims 34 and 35 are allowable. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reasons the independent claims are allowable as well as for the features they recite.

Withdrawal of the rejection is respectfully requested.

Newly-added claims 32 – 35 also include features not shown in the applied art. Support for these newly-added claims can be found in the specification, to wit:

With regard to claim 32, the features described in the newly added claim 32 are described in the specification. The feature that ozone generated from the ozone generator and the water to be treated are mixed together to obtain water to be treated containing ozone is illustrated in Fig. 1. In Fig. 1, an ozone generator 7a is connected to a water pipe provided between an ozone treatment tank 5 and an ozone treatment tank 6.

The feature such that the water to be treated containing ozone is caused to pass through an ozone bubble-forming device arranged in the water pipe to obtain water to be treated, which contains minute bubbles of ozone, thereby bringing the minute bubbles of ozone into contact with the water to be treated can also be seen in Fig. 1. The ozone bubble-forming device is arranged in the water pipe provided between the ozone treatment tank 5 and the ozone treatment tank 6 of Fig. 1. In Fig. 1, symbol 7b corresponding to the ozone bubble-forming device is not shown at a portion indicative of the ozone bubble-forming device. However, referring to Fig. 2, it is apparent that an ozone bubble-forming device 22b is arranged in the water pipe between an ozone treatment tank 20 and an ozone treatment tank 21. Therefore, by analogy of the positional arrangement of Fig. 2 to the positional arrangement of Fig. 1, in Fig. 1 as well,

although not denoted by a reference symbol, the portion represented as a rectangle in the figure, which is arranged in the water pipe between the ozone treatment tank 5 and the ozone treatment tank 6, is the ozone bubble-forming device 7b.

Further, the second paragraph of page 25 of the specification contains a description which reads: "That is, an ozone generator for generating minute bubbles of ozone is arranged in a water pipe". Thus, it can be understood that the ozone bubble-forming device is arranged in the water pipe.

The feature that the water to be treated which contains the minute bubbles of ozone is supplied to an ozone treatment tank is also illustrated in Fig. 1. In Fig. 1, the ozone bubble-generating device 7b is arranged upstream of the ozone treatment tank 6 and adjacent to the ozone treatment tank 6. Further, the second paragraph of page 25 of the specification contains a description which reads: "That is, an ozone generator for generating minute bubbles of ozone is arranged in a water pipe to supply water having minute bubbles of ozone dispersed therein to the ozone treatment tanks".

Further, in lines 3 to 5 of page 4 of the specification, there is a description which reads: "ozone is not simply supplied to the water to be treated but minute bubbles of ozone are supplied to the water to be treated".

Coury does not describe that “passing the water to be treated which contains ozone through an ozone bubble-forming device arranged in a water pipe”.

With regard to claim 33, like claim 32, claim 33 is prepared by adding features related to the ozone bubble-forming device to the existing claim 1. The differences from claim 32 reside in the kind of the ozone bubble-forming device used.

With regard to the feature that the ozone bubble-forming device is arranged on the bottom of the ozone treatment tank, in the second paragraph of page 25 of the specification, there is a description which reads: "Ozone bubble-forming devices are arranged on bottoms of the ozone treatment tanks for feeding minute bubble of ozone therefrom". Further, in lines 9 to 12 of page 6 of the specification, there is a description which reads: "An ozone treatment device using the ozone bubble-forming device (rotational type) arranged at the bottom of the ozone treatment tank carries out the ozone treatment".

With regard to the feature that the water to be treated which contains ozone is subjected to a forced convection state within the ozone treatment tank to obtain water to be treated which contains minute bubbles of ozone, thus bringing the minute bubbles of ozone into contact with the water to be treated, the description from line 4 of page 5 to line 16 of page 6 of the specification provides grounds for support.

With regard to claim 34, claim 34 is a claim which states the "method" invention of claim 32 as a "device" invention.

With regard to claim 35, claim 35 is a claim which states the "method" invention of claim 33 as a "device" invention.

In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

Date: August 28, 2003

By: _____

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Enclosure(s): Petition for Extension of Time (one month)

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